

REMARKS

This application has been reviewed in light of the Office Action dated October 19, 2009.

Claims 1-31, 32, 35-37, and 39-43 are presented for examination, of which Claim 31, 36 and 37 are in independent form. Claims 1-30 are withdrawn from consideration. Claims 33, 34 and 38 have been cancelled, without prejudice or disclaimer of the subject matter presented therein.

Claims 31, 32, 35-37, 40 and 43 have been amended to define still more clearly what Applicants regard as their invention, in terms of distinguishing over the art of record. Favorable reconsideration is requested. Support for the claim amendments is found in the original disclosure, for example, in Fig. 11 and the accompanying description, and the decision unit and deciding step correspond but are not limited to element 1101 shown in Fig. 11, and therefore, no new matter has been added.

The drawings are objected to because Figs. 20-22 are not labeled as prior art. In response, while not conceding the propriety of the objection, these figures have been amended to add the legend prior art thereto and formal replacement drawings are being submitted herewith. Therefore, Applicants respectfully request that the objection be withdrawn.

The Abstract is objected to for minor informalities therein. In response, while not conceding the propriety of the objection, the Abstract has been amended to address the points raised in the Office Action. Therefore, Applicants respectfully request that the objection be withdrawn.

Claims 37 and 43 are rejected under 35 U.S.C. § 101. In response, while not conceding the propriety of the rejection, these claims have been amended to address the points raised in the Office Action. Therefore, Applicants respectfully request that the objection be withdrawn.

Claims 31, 32, and 36-38 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,351,491 (Lee et al.) and U.S. Patent No. 6,205,252 (Nguyen et al.). Claims 33, 39, and 42-44 are rejected under 35 U.S.C. § 103(a) over Lee et al. and Nguyen et al. in view of U.S. Patent Publication No. 2002/0018598 (Maeda et al.).

In response, while not conceding the propriety of the rejections, independent Claims 31, 36, and 37 have been amended. Applicants submit that as amended, these claims are allowable for the following reasons.

Claim 31 relates to a moving image coding apparatus which codes time series frames constituting moving image data, comprising a decomposition unit, first and second extraction units, a motion compensation unit, first and second coding units, and a multiplexing unit. The decomposition unit decomposes a current frame into a plurality of subbands having different frequency components. The first extraction unit, with a threshold set for each subband being represented by TB, extracts data of upper bits as motion compensation target data which excludes lower TB bits of frequency component coefficient data constituting each subband. The second extraction unit extracts data of lower TB bits of the frequency component coefficient data constituting each subband as non motion compensation target data. The motion compensation unit generates motion vector information and predicted value information on the basis of motion compensation target data of the current frame extracted by the first extraction unit and decoded data corresponding to the motion compensation target data obtained when a preceding frame is coded. The first coding unit obtains a difference value between predicted value information generated by the motion compensation unit and the motion compensation target data in the current frame and coding the difference value and the motion vector information. The

multiplexing unit multiplexes code data obtained by the first coding unit and the second coding unit.

Claim 31 has been amended to recite that the second coding unit encodes, in units of bitplanes, data of the lower TB bits of each frequency component coefficient data extracted by the second extraction unit. Claim 31 has also been amended to recite a decision unit that detects the code data amount of the current frame multiplexed by the multiplexing unit and decides a number of bitplanes not to be encoded for the subsequent frame. In addition, Claim 31 has been amended to recite that the second coding unit encodes bitplanes of data of the lower TB bits excluding the number of bitplanes, from a lowest bitplane, decided by the decision unit when the preceding frame had been encoded.

By this arrangement, the bitplanes not to be encoded can be selected among the lower bits divided from subbands, but are not selected from the upper bits as motion compensation target divided from subbands. As a result, even if any number of bitplanes not to be encoded are decided, the first coding unit can always encode the upper bits without failure of a bitplane, thereby suppressing the increase of the code data amount, preventing the errors for motion compensation from being accumulated in a memory storing the preceding frame.

In contrast, the citations to Lee et al. and Nguyen et al. are not understood to disclose or suggest a decision unit that detects the code data amount of the current frame multiplexed by the multiplexing unit and decides a number of bitplanes not to be encoded for the subsequent frame, where the second coding unit encodes bitplanes of data of the lower TB bits excluding the number of bitplanes, from a lowest bitplane, decided by the decision unit when the preceding frame had been encoded, as recited by amended Claim 31. Rather, the citation to Lee et al. is understood to disclose optimizing rate control by determining the quantization values recursively

and DWT and motion compensation using a motion vector (see Fig. 1), while the citation to Nguyen et al. is understood to disclose dividing data to be encoded into upper bits and lower bits, and executing different encoding of the upper bits and lower bits, for example, by executing a lossless encoding for the upper bits and lossy encoding for the lower bits (see Figs. 3 and 5).

Since amended Claim 31 is understood to recite at least one feature not disclosed or suggested by the citations to Lee et al. and Nguyen et al., Applicants submit that the Office has not yet satisfied its burden of proof to establish a prima facie case of obviousness against amended Claim 31 over these citations. Therefore, Applicants respectfully request that the rejection of amended Claim 31 be withdrawn. And since corresponding method and medium Claims 36 and 37 have been amended in a corresponding manner, they are submitted to be allowable over these citations for corresponding reasons. Therefore, Applicant respectfully requests that the rejection of amended Claims 36 and 37 be withdrawn.

The other rejected claims in this application depend from one or another of the independent claims discussed above and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual consideration or reconsideration, as the case may be, of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

No petition to extend the time for response to the Office Action is deemed necessary for the this Amendment. If, however, such a petition is required to make this Amendment timely

filed, then this paper should be considered such a petition and the Commissioner is authorized to charge the requisite petition fee to Deposit Account 06-1205.

Applicant's undersigned attorney may be reached in our Washington, D.C. Office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

/Gary M. Jacobs/

Gary M. Jacobs
Attorney for Applicant
Registration No. 28,861

FITZPATRICK, CELLA, HARPER & SCINTO
1290 Avenue of the Americas
New York, New York 10104-3801
Facsimile: (212) 218-2200

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